

b) Amendments to the Claims

Please amend claims 12, 13, 18, 19, 23, 35, 45 and 55 as follows. A detailed listing of all the claims that are or were in the application is provided.

Claims 1. - 11. Cancelled)

--12. (Currently Amended) A processing apparatus having a processing chamber for processing a substrate or a film therein and an exhaust means for exhausting a gas from the processing chamber, comprising: a conductance adjusting valve for controlling pressure in the processing chamber provided in an exhaust gas flow path in an exhaust pipe provided between the processing chamber and the exhaust means; a trap means provided between the processing chamber and the exhaust means, for causing a chemical reaction in a non-reacted gas and/or a by-product during processing, said trap means provided in ~~an~~ the exhaust gas flow path in ~~an~~ the exhaust pipe between the processing chamber and the conductance adjusting valve; ~~provided between the processing chamber and the exhaust means;~~ and a filament provided inside the trap means and comprised of a metal or an alloy comprising as a main component at least one of tungsten, molybdenum and rhenium.

13. (Currently Amended) A processing apparatus having a processing space for processing a substrate or a film therein and an exhaust means for exhausting a gas from the processing space, comprising: means provided between the processing space and the exhaust means, for causing a chemical reaction in a non-reacted gas and/or a by-

product during processing of the substrate or the film, wherein the means comprises a heat generating chamber comprising phosphorous (P) atoms, said means for causing a chemical reaction provided in an exhaust gas flow path in an exhaust pipe provided between the processing chamber and the exhaust means; and a conductance adjusting valve for controlling pressure in the processing chamber provided in the exhaust gas flow path in the exhaust pipe between the means for causing a chemical reaction and the exhaust means.

14. (Original) The processing apparatus according to claim 13, wherein the heat generating member comprising phosphorous atoms contains at least one of chromium (Cr), molybdenum (Mo), tungsten (W), vanadium (V), niobium (Nb), tantalum (Ta), titanium (Ti), zirconium (Zr) and hafnium (Hf).

15. (Currently Amended) A processing apparatus having a processing space for processing a substrate or a film therein and an exhaust means for exhausting a gas from the processing space, comprising: means provided between the processing space and the exhaust means, for causing a chemical reaction in a non-reacted gas and/or a by-product during processing of the substrate or the film, wherein the means comprises a heat generating member comprising phosphorous (P) atoms, wherein the amount of phosphorous atoms contained in the heat generating member is 0.1% or more in an atomic composition ratio relative to total atomic component constituting the heat generating member; and a conductance adjusting value for controlling pressure in the processing chamber provided in an exhaust gas flow path between the means for causing a chemical reaction and the exhaust means.

16. (Original) The processing apparatus according to claim 13, which is used while the temperature of the heat generating member is set to 500°C or more.

Claim 17. (Cancelled)

18. (Currently Amended) A processing apparatus having a processing space for processing a substrate or a film therein and an exhaust means for exhausting a gas from the processing space, comprising: between the processing space and the exhaust means, means for causing a chemical reaction in a non-reacted gas and/or a by-product during processing of the substrate or the film, wherein the means comprises a heat generating member comprising silicon (Si) atoms, and wherein the means for causing the chemical reaction is provided in an exhaust gas flow path in an exhaust pipe provided between the processing space and the exhaust means; and a conductance adjusting valve for controlling pressure in the processing chamber provided in the exhaust pipe between the means for causing chemical reaction and the exhaust means.

19. (Currently Amended) The processing apparatus according to claim 18, wherein the heat generating member ~~comprises~~ comprising the silicon atoms contains at least one of chromium (Cr), molybdenum (Mo), tungsten (W), vanadium (V), niobium (Nb), tantalum (Ta), titanium (Ti), zirconium (Zr) and hafnium (Hf).

20. (Original) The processing apparatus according to claim 18, wherein the amount of silicon atoms contained in the heat generating member is 0.1% or more in an

atomic composition ratio relative to total atomic components constituting the heat generating member.

21. (Original) The processing apparatus according to claim 18, which is used while the temperature of the heat generating member is set to 500°C or more.

Claim 22. (Cancelled)

23. (Currently Amended) A processing apparatus having a processing chamber and an exhaust means for exhausting a gas from the processing chamber, comprising: a chemical reaction causing means provided in an exhaust path connecting the processing chamber and the exhaust means, for causing a chemical reaction in a non-reacted gas and/or a by-product exhausted from the processing chamber; ~~and a recovering~~ means provided within a distance of 5 cm from the chemical reaction causing means, for recovering a chemical reaction product generated by the chemical reaction causing means; and a conductance adjusting valve for controlling pressure in the processing chamber provided in the exhaust gas flow path between the means for causing a chemical reaction and the exhaust means.

24. (Original) The processing apparatus according to claim 23, wherein the recovering means also serves as a wall surface of the exhaust path.

25. (Original) The processing apparatus according to claim 23, wherein the processing performed in the processing chamber is film formation by a plasma CVD process.

26 (Original) The processing apparatus according to claim 23, wherein the chemical reaction causing means comprises at least a high-melting metal filament as a main constituent.

27. (Original) The processing apparatus according to claim 26, wherein the high-melting metal filament comprises at least one of tungsten, molybdenum and rhenium.

Claims 28. - 34. (Cancelled)

35. (Currently Amended) A processing apparatus having a processing chamber and an exhaust means for exhausting a gas from the processing chamber, comprising: in an exhaust path connecting the processing chamber and the exhaust means, a region with a different mean velocity of the gas from that of the processing chamber; and a chemical reaction causing means provided in the region, for causing a chemical reaction in a non-reacted gas and/or a by product exhaust from the processing chamber, wherein the mean velocity of the gas of the region having the chemical reaction causing means is larger than the mean velocity of the processing chamber, wherein the chemical reaction causing means comprises a high-melting metal filament and wherein the chemical reaction causing

means is provided in an exhaust gas flow path in an exhaust pipe provided between the processing space and the exhaust means; and a conductance adjusting valve for controlling pressure in the processing chamber provided in the exhaust pipe between the means for causing the chemical reaction and the exhaust means.

Claims 36. and 37. (Cancelled)

38. (Original) The processing apparatus according to claim 37, wherein the material of the high-melting metal filament is a metal or an alloy comprising as a main component at least one of tungsten, molybdenum and rhenium.

Claims 39. - 44. (Cancelled)

45. (Currently Amended) A processing apparatus having a processing space and an exhaust means for exhausting a gas from the processing space, comprising: a chemical reaction causing means provided in an exhaust path connecting the processing space and the exhaust means, for causing a chemical reaction in a non-reacted gas and/or a by-product during the processing; and a cooling means disposed in the exhaust path in the vicinity of the chemical reaction causing means and provided on the side of the exhaust means of the chemical reaction causing means, said cooling means having an O-ring vacuum seal and being capable of controlling the temperature of the vacuum seal to prevent damage thereto; and a conductance adjusting valve for adjusting pressure in the

processing chamber provided in the exhaust path between the cooling means and the exhaust means.

46. (Original) The processing apparatus according to claim 45, wherein the cooling means uses a liquid as a cooling medium.

47. (Original) The processing apparatus according to claim 45, wherein the cooling means uses a gas as a cooling medium.

48. (Original) The process apparatus according to claim 45, further comprising a heat insulating means provided between the chemical reaction causing means for causing the chemical reaction in the non-reacted gas and/or the by-product during the processing and the processing space.

49. (Original) The processing apparatus according to claim 45, comprising a heat insulating means provided between the means for causing the chemical reaction in the non-reacted gas and/or the by-product during the processing and a processing object.

50. (Original) The processing apparatus according to claim 45, further comprising means for controlling the temperature of a member forming the processing space to be constant.

51. (Original) The processing apparatus according to claim 45, further comprising a heat insulating means adjacent the chemical reaction causing means for causing the chemical reaction in the non-reacted gas and/or by-product during the processing, on the side of the exhaust means thereof.

52. (Original) The processing apparatus according to claim 45, wherein the means for causing the chemical reaction in the non-reacted gas and/or by-product during the processing comprises allowing to pass through a flow path in which a catalyst acting on the non-reacted gas and/or by-product is provided.

53. (Original) The processing apparatus according to claim 45, wherein the means for causing the chemical reaction in the non-reacted gas and/or by-product during the processing comprises allowing the non-reacted gas and/or by-product to pass through a flow path in which a heat generating member is disposed.

54. (Original) The processing apparatus according to claim 45, wherein the non-reacted gas and/or by-product comprises silicon.

55. (Currently Amended) A processing apparatus having a processing space and an exhaust means for exhausting a gas from the processing space, comprising: a chemical reaction causing means provided in an exhaust path between the processing space in a chamber and the exhaust means, for causing a chemical reaction in a non-reacted gas and/or a by-product during the processing; and a cooling means provided in at least a part



of the exhaust path between the processing space and the exhaust means, said cooling means having an O-ring vacuum seal and being capable of controlling the temperature of the vacuum seal to prevent damage thereto; and a conductance adjusting valve for adjusting pressure in the processing chamber provided in the exhaust path between the cooling means and the exhaust means.